

**REMARKS**

The following remarks are in response to the Office Action mailed on February 7, 2006. Upon entrance of the amendments set out above, Claims 1-61 remain pending in this application. Claims 1-53 have been withdrawn from consideration.

Claims 54, 55, 58, and 59 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kimbrough et al. (4,301,355). Claims 54-59 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kimbrough et al. (4,301,355) taken with WIPO document no. WO 00/64620. Response is hereby made to these rejections.

The Examiner noted that Kimbrough, with reference to Fig.8, at columns 5-8 discloses pulsed welding wherein the wire feed speed is controlled to be proportional to the arc voltage (in the "CCODW" mode). The Examiner further held that, in the "CCODW" mode, Kimbrough teaches that a short circuit will result in retarded or slowed wire feed speed. The Examiner held that WIPO document no. WO 00/64620 discloses reversing the wire in a short circuit process.

Independent claim 54 has been amended to recite that when the wire is not being slowed (in response to a short) the wire is moved **"to the arc at a speed independent of arc length in the event a short is not detected"**. Independent claim 58 has been amended to also recite that when the is moved **"to the arc at a speed independent of arc length when the motion is not being retarded."**

Kimbrough teaches to do the opposite -- when sensing short for wire feed control have the speed be dependent on (specifically proportional to) the wire feed speed.

It is difficult to combine Kimbrough with WIPO 00/64620 because Kimbrough teaches a proportional control, and WIPO 00/64620 teaches reversing. A proportional control that reverses would require a negative arc voltage -- which is possible only in

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ac welding. Thus, such a combination would result in advancing the wire during EP and retracting the wire during EN.

Alternatively, while not suggested by any of the cited art, adding a feature that the proportionality taught by Kimbrough be offset from zero would result in a retraction as the arc length became shorter. However, both modifications of Kimbrough fail to teach the inventions of claims 54 and 58 that require **retarding the motion of the wire in the event a short is detected, and moving wire to the arc at a speed independent of arc length in the event a short is not detected.** Thus, claims 54, 58, and claims 55-57, and 59-61, which depend thereon, should be allowed.

Accordingly, in view of the above amendments and remarks, Applicants respectfully submit that the application should be allowed. The Examiner is invited to telephone the undersigned below if it will aid in the prosecution of this application.

Respectfully Submitted

A handwritten signature in dark ink, appearing to be 'GRC', is written over a horizontal line.

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